

What is claim d is:

1 1. A headlamp optical system comprising:
2 an optical body made of a light transmissive material, the optical body
3 being disposed about an axis and extending both laterally with respect to the
4 axis and in the direction of the axis, the body having a rear surface and a front
5 surface;
6 a cavity extending in the optical body from the rear surface toward the
7 front surface for receiving a light source therein, the cavity being defined by a
8 light transmissive wall for admitting light from the light source into the optical
9 body, and
10 a reflective surface on the rear surface of the optical body for reflecting
11 substantially collimated light toward and through the front surface.

1 2. The headlamp optical system of claim 1 wherein the reflective surface
2 is aluminum.

1 3. The headlamp optical system of claim 2 wherein the aluminum is a
2 coating.

1 4. The headlamp optical system of claim 1 wherein the reflective surface
2 is a dichroic coating.

1 5. The headlamp optical system of claim 1 wherein the transmissive
2 material of which the optical body is made is glass.

1 6. The headlamp optical system of claim 1 in combination with a plastic
2 lens to provide a headlamp assembly, wherein the light source is a filament
3 bulb and wherein the light transmissive material of the optical body is glass.

1 7. The headlamp optical system of claim 6 wherein the reflective surface
2 is a dichroic coating.

1 8. The headlamp optical system of claim 7 wherein the dichroic coating
2 has a component that reflects visible light and a component transmits infrared
3 radiation therethrough for emission out of the back surface of the optical
4 body.

1 9. The headlamp optical system of claim 8 wherein the cavity extends
2 completely through the optical body and the filament bulb emits light laterally,
3 axial emission being blocked by an opaque end portion of the filament bulb.

1 10. A vehicular headlamp assembly comprising:
2 an optical body made of light transmissive material, the optical body
3 being formed about an axis and having a convex rear surface and a front
4 surface;
5 a cavity extending along the axis into the optical body from the rear
6 surface toward the front surface, the cavity being defined by a light
7 transmissive wall that refracts light as light passes therethrough;

8 a bulb disposed in the cavity for emitting light laterally with respect to
9 the axis for transmission through the light transmissive wall into the optical
10 body;

11 a concave reflective coating on the substantially convex rear surface of
12 the optical body for reflecting light from the bulb which has been refracted by
13 the light transmissive wall in a collimated beam toward the front surface of the
14 optical body, and

15 a lens of plastic material positioned in front of and in spaced relation
16 with the front surface of the optical body for refracting the collimated light
17 reflected from the reflector out of the optical body.

1 11. The vehicular headlamp according to claim 10 wherein the reflective
2 coating is a dichroic coating and the optical body is made of glass.

1 12. The vehicular headlamp according to claim 11 wherein the dichroic
2 coating has both reflective and transmissive components, the reflective
3 components reflecting visible light through the front surface of the optical
4 body and the transmissive components emitting infrared light from the optical
5 body through the rear surface thereof.

1 13. The vehicular headlamp assembly of claim 13 wherein the dichroic
2 coating is tuned to not reflect portions of yellow wavelength light.

- 1 14. The vehicular headlamp of claim 10 wherein the dichroic coating is
- 2 tuned to not reflect portions of yellow wavelength light.